WHAT IS CLAIMED IS:

1\ A multi-piece solid golf ball comprising a core consisting of an inner core and an outer core formed on the inner core, and one or more layers of cover covering the core,

wherein the inner core has a diameter of 30 to 39.5 mm and a center hardness in JIS-C hardness of 55 to 70, and is formed from press molded rubber composition comprising polybutadiene, a co-crosslinking agent, an organic peroxide and a filler, and the JIS-C hardness at a distance of 15 mm from the center point of the inner core is higher than the center hardness by 5 to 20,

the outer core has a thickness of 0.3 to 2.0 mm and a surface hardness in JIS-C hardness of 75 to 90, and is formed from press molded rubber composition comprising polybutadiene, a co-crosslinking agent, an organic peroxide and a filler, and the surface hardness of the outer core is higher than the center hardness of the inner core by 10 to 35, and

the cover contains thermoplastic resin as a base resin, and the outmost cover layer has a thickness of 1.5 to 2.5 mm and a surface hardness in Shore D hardness of 64 to 72.

2. The multi-piece solid golf ball according to Claim 1, wherein the inner core has a center hardness of

10

15

20

25

59 to 67.

3. The multi-piece solid golf ball according to Claim 1, wherein the cover has a single layer structure.